

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
1 September 2005 (01.09.2005)

PCT

(10) International Publication Number
WO 2005/080774 A3

(51) International Patent Classification⁷: **H02M 3/156**,
F02N 11/08, 11/08

(21) International Application Number:
PCT/IB2005/000344

(22) International Filing Date:
11 February 2005 (11.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2004-037120 13 February 2004 (13.02.2004) JP

(71) Applicant (for all designated States except US): **TOYOTA JIDOSHA KABUSHIKI KAISHA [JP/JP]**; 1, Toyota-cho, Toyota-shi, Aichi-ken 471-8571 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KUSAFUKA, Hiroyasu [JP/JP]**; c/o Toyota Jidosha Kabushiki Kaisha, 1, Toyota-cho, Toyota-shi, Aichi-ken 471-8571 (JP). **ABO, Shouji [JP/JP]**; c/o Toyota Jidosha Kabushiki Kaisha,

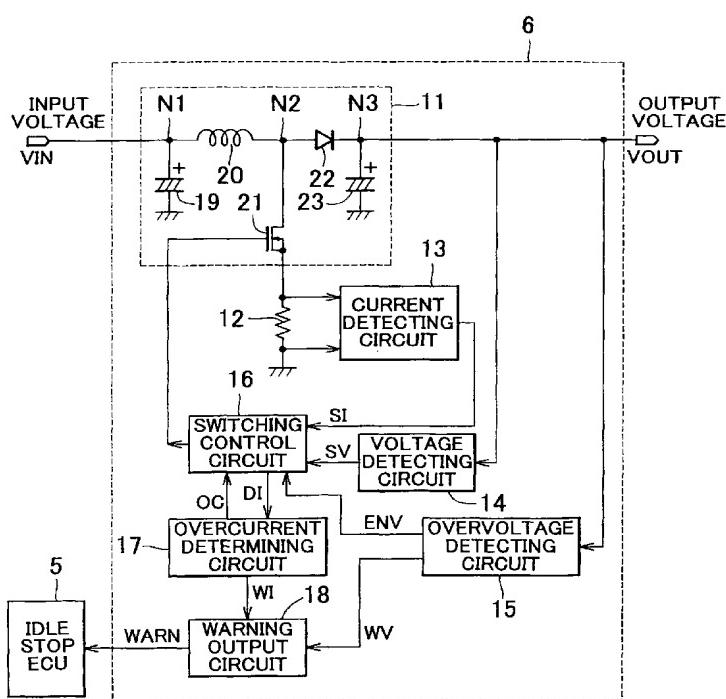
of 1, Toyota-cho, Toyota-shi, Aichi-ken 471-8571 (JP). **OJIMA, Yoshitaka [JP/JP]**; c/o Toyota Macs Inc. of 2, Toyota-cho, Toyota-shi, Aichi-ken 471-0826 (JP). **MORITANI, Yusuke [JP/JP]**; c/o Toyota Macs Inc., of 2, Toyota-cho, Toyota-shi, Aichi-ken 471-0826 (JP).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,

[Continued on next page]

(54) Title: VOLTAGE GENERATOR DEVICE, MOTOR VEHICLE, CONTROL METHOD FOR THE VOLTAGE GENERATOR DEVICE, CONTROL METHOD FOR THE MOTOR VEHICLE, AND COMPUTER-READABLE RECORDING MEDIUM STORING PROGRAM FOR CAUSING COMPUTER TO EXECUTE THE CONTROL METHOD



(57) Abstract: A voltage raising device that provisionally maintains an operation and function when there is an abnormality provided. If a battery voltage drops when an engine is restarted after an idle stop, the voltage raising device (6) raises the output voltage to a target voltage by using a voltage detecting circuit (14) and a current detecting circuit (13). If an overcurrent determining circuit (17) detects overcurrent, a switching control circuit (16) reduces the target voltage to perform a control. If overvoltage is output, for example, due to an increased target voltage caused by an internal setting deviation resulting from a failure, an overvoltage detecting circuit (15) outputs a prohibition signal ENV to stop the switching operation. However, as long as the output voltage is not overvoltage, the voltage raising operation is allowed. Therefore, the possibility that the engine can be started at least once without a problem is increased.



SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:
23 March 2006

Published:

— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.